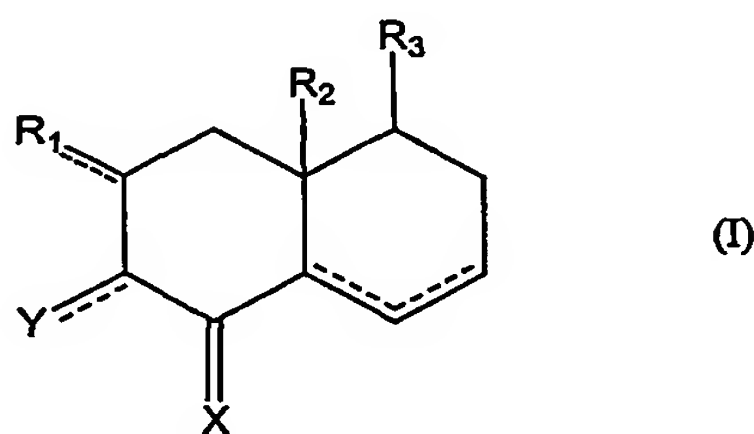


THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A pest controlling composition comprising at least one compound of formula (I) or a tautomer thereof:

5



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

when ----- is a single bond attached to Y, Y is selected from the group consisting of H,  
 10 [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>,  
 [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

when ----- is a double bond attached to Y, Y is O;

when ----- is a single bond attached to R<sub>1</sub>, R<sub>1</sub> is selected from the group consisting of H,  
 OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub>  
 15 arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub>  
 cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub>  
 heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub>  
 alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>,  
 [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

20 when ----- is a double bond attached to R<sub>1</sub>, R<sub>1</sub> is CR<sub>1a</sub>R<sub>1b</sub> wherein R<sub>1a</sub> and R<sub>1b</sub> are  
 independently selected from C<sub>1</sub>-C<sub>10</sub>alkyl;

R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub>  
 alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-  
 C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-

C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

5 each R<sub>4</sub> is independently selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy and C<sub>2</sub>-C<sub>10</sub> alkenyloxy;

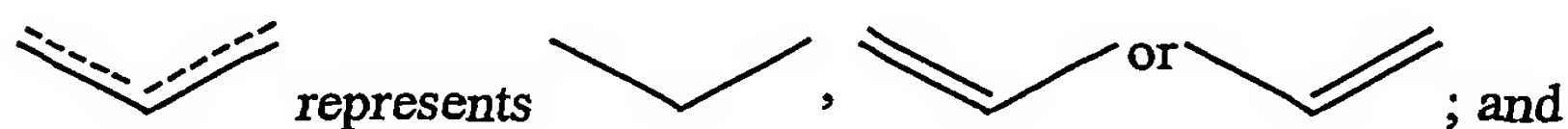
10 R<sub>5</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, (C=O)R<sub>6</sub>, PO<sub>3</sub>R<sub>8</sub>, SO<sub>3</sub>R<sub>8</sub> and SO<sub>2</sub>R<sub>8</sub>;

15 R<sub>6</sub> is selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>6</sub>-C<sub>10</sub> aryloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>10</sub> heterocycliloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>1</sub>-C<sub>10</sub> alkenylthio, C<sub>6</sub>-C<sub>10</sub> arylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

20 R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and NO<sub>2</sub>;

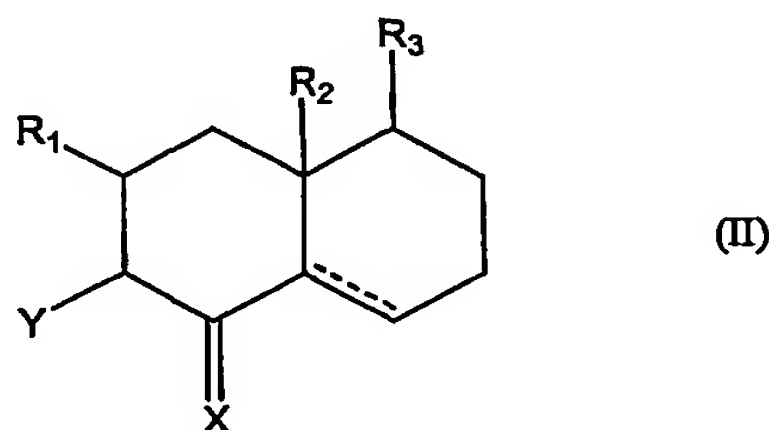
25 R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl;

n is 0 or an integer selected from 1 to 5;



wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

2. A composition according to claim 1 wherein the compound of formula (I) is a compound of formula (II):



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

each R<sub>4</sub> is independently selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy and C<sub>2</sub>-C<sub>10</sub> alkenyloxy;

R<sub>5</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, (C=O)R<sub>6</sub>, PO<sub>3</sub>R<sub>8</sub>, SO<sub>3</sub>R<sub>8</sub> and SO<sub>2</sub>R<sub>8</sub>;

- 50 -

$R_6$  is selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkoxy,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyloxy,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_6$ - $C_{10}$  aryloxy,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_3$ - $C_6$  cycloalkyloxy,  $C_3$ - $C_6$  cycloalkenyloxy,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_{10}$  heterocyclyloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_1$ - $C_{10}$  alkenylthio,  $C_6$ - $C_{10}$  arylthio,  $C_3$ - $C_6$  cycloalkylthio, and  $C_3$ - $C_{10}$  heterocyclylthio;

$R_7$  is selected from the group consisting of H, halogen,  $OR_5$ ,  $SR_5$ ,  $N(R_4)_2$ ,  $(C=O)R_6$ ,  $(C=S)R_6$ ,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_6$  cycloalkyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl, and  $NO_2$ ;

$R_8$  is selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_5$ - $C_{10}$  cycloalkylalkenyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl and  $C_5$ - $C_{13}$  heterocyclylalkenyl;

$n$  is 0 or an integer selected from 1 to 5;

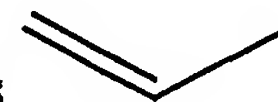
----- represents a single or double bond; and

wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

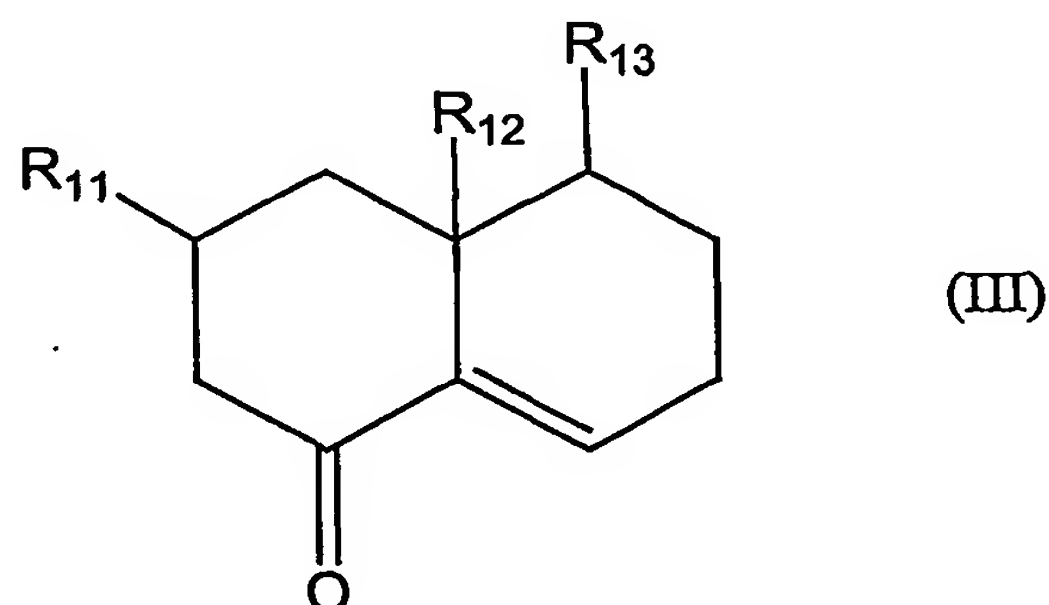
3. A composition according to claim 1 wherein



represents



4. A composition according to claim 1 comprising at least one compound of formula (III):



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wherein  $R_{11}$  is selected from the group consisting of  $C_2$ - $C_{10}$  alkenyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_2$ - $C_{10}$  alkenyloxy wherein each  $C_2$ - $C_{10}$  alkenyl or  $C_2$ - $C_{10}$  alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

$R_{12}$  and  $R_{13}$  are independently selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_3$ - $C_{10}$  cycloalkyl,  $C_5$ - $C_{10}$  heteroaryl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_1$ - $C_{10}$  alkoxy, wherein each  $C_1$ - $C_{10}$  alkyl and  $C_1$ - $C_{10}$  alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

5. A composition according to claim 4, wherein  $R_{11}$  is  $C_2$ - $C_{10}$  alkenyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups, and  $R_{12}$  and  $R_{13}$  are independently selected from  $C_1$ - $C_{10}$  alkyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups.

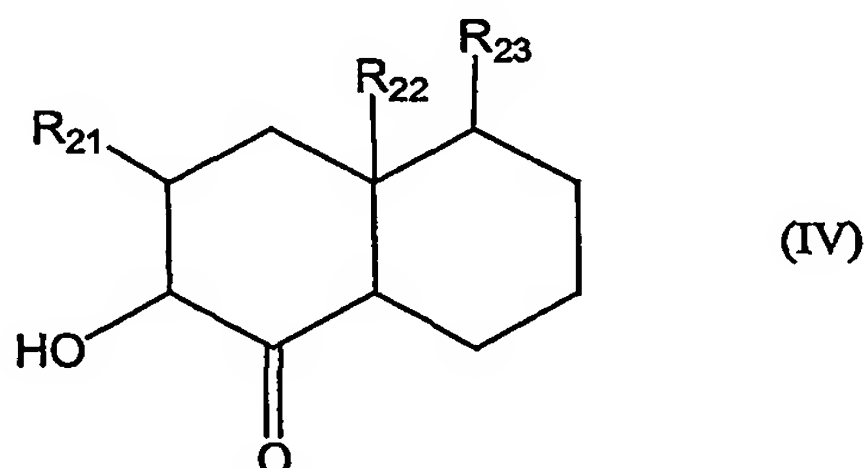
6. A composition according to claim 1 wherein at least one compound of formula (I) is eremophilone.

7. A composition according to claim 1 wherein



represents

8. A composition according to claim 1 comprising at least one compound of formula (IV):



(IV)

wherein  $R_{21}$ ,  $R_{22}$  and  $R_{23}$  are independently selected from the group consisting of H, OH, SH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_4$ - $C_{10}$  cycloalkenylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $C_1$ - $C_{10}$  alkoxy,  $C_2$ - $C_{10}$  alkenyloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_2$ - $C_{10}$  alkenylthio,  $[C(R_7)_2]_n$ halo,  $[C(R_7)_2]_n(C=O)R_6$ ,  $[C(R_7)_2]_n(C=S)R_6$ ,  $[C(R_7)_2]_nN(R_4)_2$ ,

$[C(R_7)_2]_n(C=NR_4)R_6$ ,  $[C(R_7)_2]_nNO_2$  and  $[C(R_7)_2]_nNR_4OR_8$ ;

each  $R_4$  is independently selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $C_1$ - $C_{10}$  alkoxy and  $C_2$ - $C_{10}$  alkenyloxy;

$R_6$  is selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkoxy,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyloxy,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_6$ - $C_{10}$  aryloxy,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_3$ - $C_6$  cycloalkyloxy,  $C_3$ - $C_6$  cycloalkenyloxy,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_{10}$  heterocycliloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_1$ - $C_{10}$  alkenylthio,  $C_6$ - $C_{10}$  arylthio,  $C_3$ - $C_6$  cycloalkylthio, and  $C_3$ - $C_{10}$  heterocyclylthio;

$R_7$  is selected from the group consisting of H, halogen,  $OR_5$ ,  $SR_5$ ,  $N(R_4)_2$ ,  $(C=O)R_6$ ,  $(C=S)R_6$ ,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_6$  cycloalkyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl, and  $NO_2$ ;

$R_8$  is selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_5$ - $C_{10}$  cycloalkylalkenyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl and  $C_5$ - $C_{13}$  heterocyclylalkenyl; and

$n$  is 0 or an integer selected from 1 to 5;

wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

9. A composition according to claim 8 wherein  $R_{21}$  is selected from the group consisting of  $C_2$ - $C_{10}$  alkenyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_2$ - $C_{10}$  alkenyloxy wherein each  $C_2$ - $C_{10}$  alkenyl or  $C_2$ - $C_{10}$  alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and


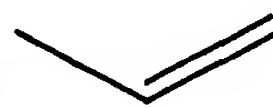
$R_{22}$  and  $R_{23}$  are independently selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_3$ - $C_{10}$  cycloalkyl,  $C_5$ - $C_{10}$  heteroaryl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_1$ - $C_{10}$  alkoxy, wherein each  $C_1$ - $C_{10}$  alkyl and  $C_1$ - $C_{10}$  alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.



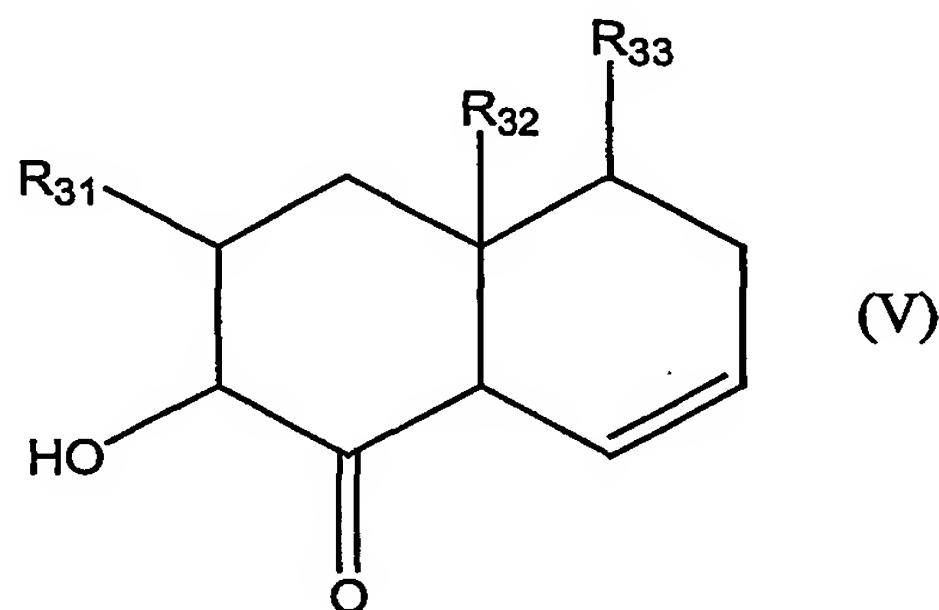
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10. A composition according to claim 8 wherein  $R_{21}$  is  $C_2$ - $C_{10}$  alkenyl, optionally substituted with a hydroxy, thiol or nitro group or 1 to 3 halo groups, and  $R_{22}$  and  $R_{23}$  are independently selected from  $C_1$ - $C_{10}$  alkyl, optionally substituted with a hydroxy, thiol or nitro group or 1 to 3 halo groups.

5 11. A composition according to claim 1 wherein at least one compound of formula (I) is 8-hydroxy-1(10)dihydroeremophilone.

12. A composition according to claim 1 wherein  represents .

13. A composition according to claim 1 comprising at least one compound of formula (V):



10 wherein  $R_{31}$  is selected from the group consisting of  $C_2$ - $C_{10}$  alkenyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_2$ - $C_{10}$  alkenyloxy wherein each  $C_2$ - $C_{10}$  alkenyl or  $C_2$ - $C_{10}$  alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

$R_{32}$  and  $R_{33}$  are independently selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_3$ - $C_{10}$  cycloalkyl,  $C_5$ - $C_{10}$  heteroaryl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_1$ - $C_{10}$  alkoxy, wherein each  $C_1$ - $C_{10}$  alkyl and  $C_1$ - $C_{10}$  alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

14. A composition according to claim 13 wherein  $R_{31}$  is  $C_2$ - $C_{10}$  alkenyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups, and  $R_{32}$  and  $R_{33}$  are independently selected from  $C_1$ - $C_{10}$  alkyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups.

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15. A composition according to claim 1 wherein at least one compound of formula (I) is 8-hydroxyeremophila-1,11-dienone.

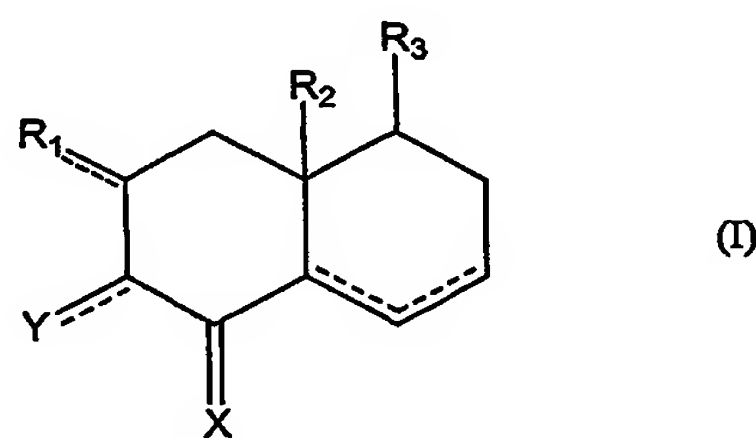
16. A composition according to claim 1 comprising an extract containing at least one compound of formula (I) obtained from a volatile oil bearing plant from the Myoporaceae  
5 family.

17. A composition according to claim 16 wherein the extract is obtained from *Eremophila*, *Myoporum* and *Bonita* genera.

18. A composition according to claim 17 wherein the extract is obtained from *E. alternifolia*, *E. duttonii*, *E. Freelingii*, *E. longifolia*, *E. cuneifolia*, *E. dalayana*, *E. abietina*,  
10 *E. caerulea*, *E. virgata*, *E. interstans*, *E. flaccida*, *E. leucophylla*, *E. metallicorum*, *E. georgei*, *E. subteritifolia*.

19. A composition according to claim 1 further comprising one or more of an adjuvant, additive or carrier.

20. A pest controlling composition comprising more than one compound of formula (I) or a tautomer thereof:  
15



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

when ----- is a single bond attached to Y, Y is selected from the group consisting of H,  
20 [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>,  
[C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

when ----- is a double bond attached to Y, Y is O;

when ----- is a single bond attached to R<sub>1</sub>, R<sub>1</sub> is selected from the group consisting of H,



OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

when ----- is a double bond attached to R<sub>1</sub>, R<sub>1</sub> is CR<sub>1a</sub>R<sub>1b</sub> wherein R<sub>1a</sub> and R<sub>1b</sub> are independently selected from C<sub>1</sub>-C<sub>10</sub>alkyl;

R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

each R<sub>4</sub> is independently selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy and C<sub>2</sub>-C<sub>10</sub> alkenyloxy;

R<sub>5</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, (C=O)R<sub>6</sub>, PO<sub>3</sub>R<sub>8</sub>, SO<sub>3</sub>R<sub>8</sub> and SO<sub>2</sub>R<sub>8</sub>;

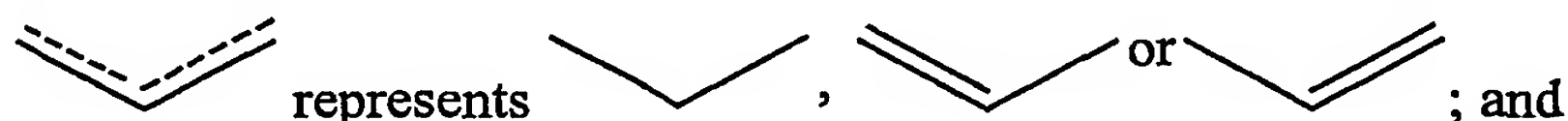
R<sub>6</sub> is selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>6</sub>-C<sub>10</sub> aryloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>10</sub> heterocycliloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>1</sub>-C<sub>10</sub> alkenylthio, C<sub>6</sub>-C<sub>10</sub> arylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>,

(C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, and NO<sub>2</sub>;

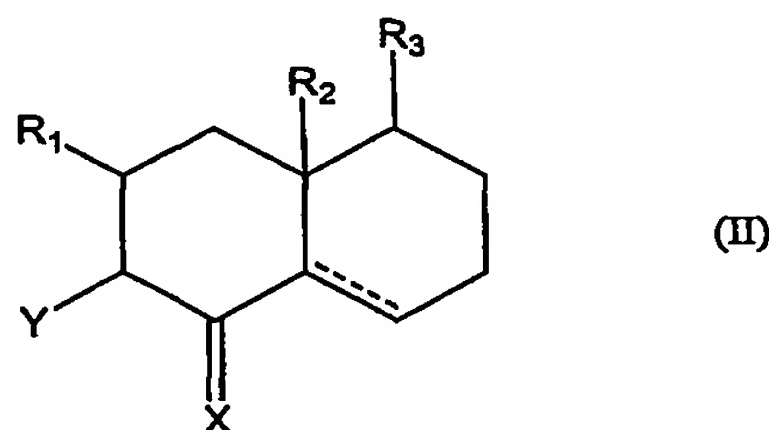
R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl;

n is 0 or an integer selected from 1 to 5;



wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

21. A composition according to claim 20 wherein at least one compound of formula (I) is a compound of formula (II):



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>,

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$[C(R_7)_2]_n(C=S)R_6$ ,  $[C(R_7)_2]_nN(R_4)_2$ ,  $[C(R_7)_2]_n(C=NR_4)R_6$ ,  $[C(R_7)_2]_nNO_2$  and  $[C(R_7)_2]_nNR_4OR_8$ ;

each  $R_4$  is independently selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $C_1$ - $C_{10}$  alkoxy and  $C_2$ - $C_{10}$  alkenyloxy;

$R_5$  is selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $(C=O)R_6$ ,  $PO_3R_8$ ,  $SO_3R_8$  and  $SO_2R_8$ ;

$R_6$  is selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkoxy,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyloxy,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_6$ - $C_{10}$  aryloxy,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_3$ - $C_6$  cycloalkyloxy,  $C_3$ - $C_6$  cycloalkenyloxy,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_{10}$  heterocycliloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_1$ - $C_{10}$  alkenylthio,  $C_6$ - $C_{10}$  arylthio,  $C_3$ - $C_6$  cycloalkylthio, and  $C_3$ - $C_{10}$  heterocyclylthio;

$R_7$  is selected from the group consisting of H, halogen,  $OR_5$ ,  $SR_5$ ,  $N(R_4)_2$ ,  $(C=O)R_6$ ,  $(C=S)R_6$ ,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_6$  cycloalkyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl, and  $NO_2$ ;

$R_8$  is selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_5$ - $C_{10}$  cycloalkylalkenyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl and  $C_5$ - $C_{13}$  heterocyclylalkenyl;

$n$  is 0 or an integer selected from 1 to 5;

----- represents a single or double bond; and

wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

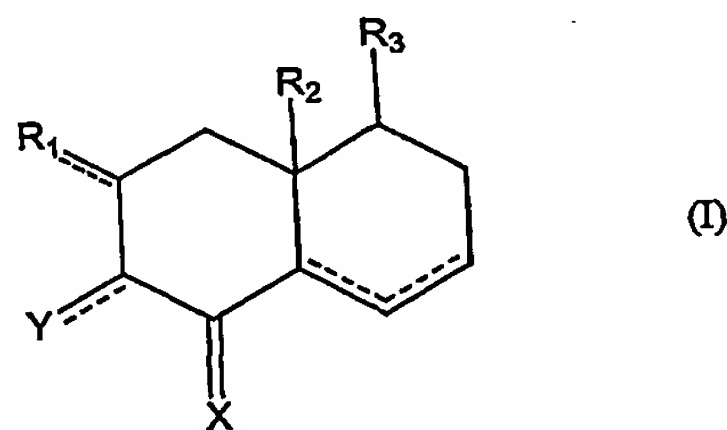
22. A composition according to claim 20 comprising an extract obtained from a volatile oil bearing plant from the Myoporaceae family.

23. A composition according to claim 22 wherein the extract is obtained from *Eremophila*, *Myoporum* and *Bonita* genera.

24. A composition according to claim 23 wherein the extract is obtained from *E. alternifolia*, *E. duttonii*, *E. Freelingii*, *E. longifolia*, *E. cuneifolia*, *E. dalayana*, *E. abietina*, *E. caerulea*, *E. virgata*, *E. interstans*, *E. flaccida*, *E. leucophylla*, *E. metallicorum*, *E. georgei*, *E. subteritifolia*.

25. A composition according to claim 20 further comprising one or more of an adjuvant additive or carrier.

26. A method for controlling pests, said method comprising exposing said pests to a pest-controlling effective amount of a compound of formula (I) or a tautomer thereof or a composition comprising at least one compound of formula (I) or a tautomer thereof:



wherein:

X is selected from O, S or N-R<sub>4</sub>;

when ----- is a single bond attached to Y, Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

when ----- is a double bond attached to Y, Y is O;

when ----- is a single bond attached to R<sub>1</sub>, R<sub>1</sub> is selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub>

cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

- 5 when ----- is a double bond attached to R<sub>1</sub>, R<sub>1</sub> is CR<sub>1a</sub>R<sub>1b</sub> wherein R<sub>1a</sub> and R<sub>1b</sub> are independently selected from C<sub>1</sub>-C<sub>10</sub>alkyl;

R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

- 15 each R<sub>4</sub> is independently selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy and C<sub>2</sub>-C<sub>10</sub> alkenyloxy;

R<sub>5</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, (C=O)R<sub>6</sub>, PO<sub>3</sub>R<sub>8</sub>, SO<sub>3</sub>R<sub>8</sub> and SO<sub>2</sub>R<sub>8</sub>;

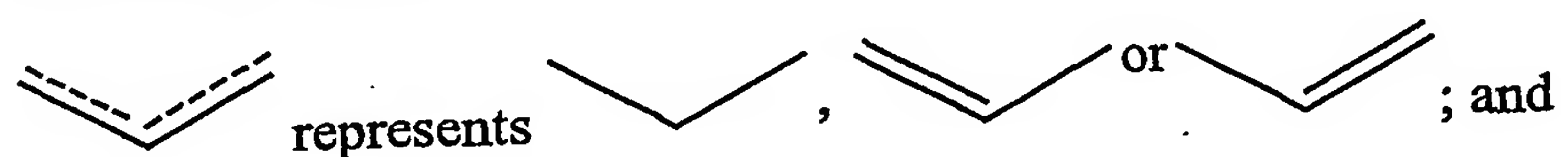
R<sub>6</sub> is selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>6</sub>-C<sub>10</sub> aryloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>10</sub> heterocyclloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>1</sub>-C<sub>10</sub> alkenylthio, C<sub>6</sub>-C<sub>10</sub> arylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

C<sub>13</sub> heterocyclalkenyl, and NO<sub>2</sub>;

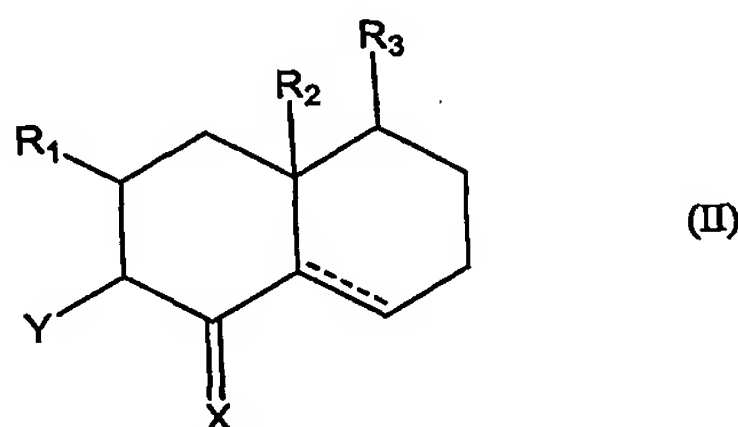
R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl  
 5 and C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl;

n is 0 or an integer selected from 1 to 5;



wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocycl group is optionally substituted.

10 27. A method according to claim 26 wherein the compound of formula (I) is a compound of formula (II):



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

15 Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocycl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;



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each  $R_4$  is independently selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $C_1$ - $C_{10}$  alkoxy and  $C_2$ - $C_{10}$  alkenyloxy;

- 5  $R_5$  is selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $(C=O)R_6$ ,  $PO_3R_8$ ,  $SO_3R_8$  and  $SO_2R_8$ ;

- 10  $R_6$  is selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkoxy,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyloxy,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_6$ - $C_{10}$  aryloxy,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_3$ - $C_6$  cycloalkyloxy,  $C_3$ - $C_6$  cycloalkenyloxy,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_{10}$  heterocycliloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_1$ - $C_{10}$  alkenylthio,  $C_6$ - $C_{10}$  arylthio,  $C_3$ - $C_6$  cycloalkylthio, and  $C_3$ - $C_{10}$  heterocyclylthio;

- 15  $R_7$  is selected from the group consisting of H, halogen,  $OR_5$ ,  $SR_5$ ,  $N(R_4)_2$ ,  $(C=O)R_6$ ,  $(C=S)R_6$ ,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_3$ - $C_6$  cycloalkyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl, and  $NO_2$ ;

- 20  $R_8$  is selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_5$ - $C_{10}$  cycloalkylalkenyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl and  $C_5$ - $C_{13}$  heterocyclylalkenyl;

$n$  is 0 or an integer selected from 1 to 5;

----- represents a single or double bond; and

- 25 wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

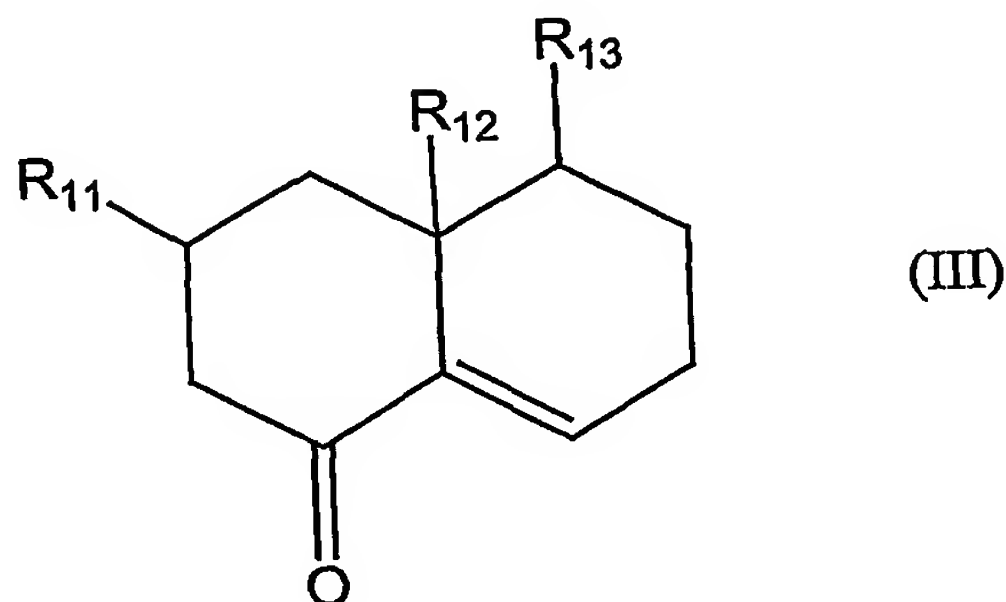
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28. A method according to claim 26, wherein compound of formula (I).



29. A method according to claim 26, wherein at least one compound of formula (I) is a compound of formula (III):

5



wherein


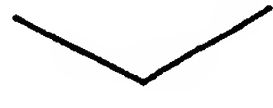
R<sub>11</sub> is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>2</sub>-C<sub>10</sub> alkenyloxy wherein each C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

R<sub>12</sub> and R<sub>13</sub> are independently selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> heteroaryl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy, wherein each C<sub>1</sub>-C<sub>10</sub> alkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

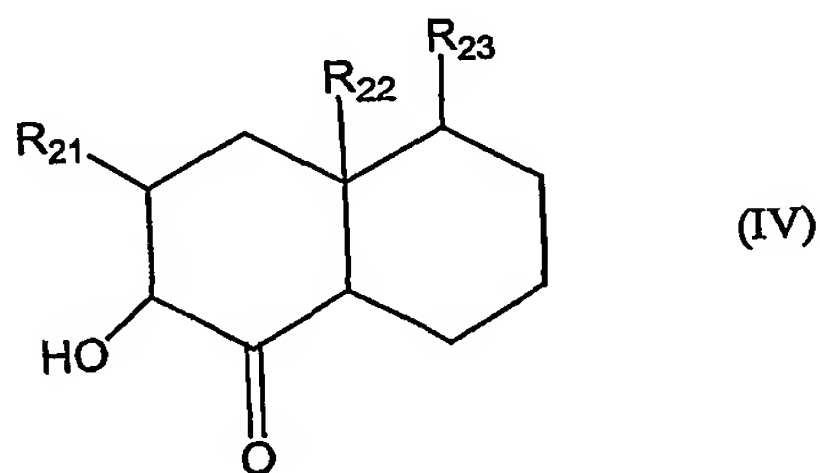
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30. A method according to claim 29, wherein  $R_{11}$  is  $C_2$ - $C_{10}$  alkenyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups, and  $R_{12}$  and  $R_{13}$  are independently selected from  $C_1$ - $C_{10}$  alkyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups.

5 31. A method according to claim 26 wherein at least one compound of formula (I) is eremophilone.

32. A method according to claim 26 wherein  represents  in the compound of formula (I).

33. A method according to claim 26 wherein at least one compound of formula (I) is a  
10 compound of formula (IV):



wherein  $R_{21}$ ,  $R_{22}$  and  $R_{23}$  are independently selected from the group consisting of H, OH, SH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_4$ - $C_{10}$  cycloalkenylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclalkyl,  $C_5$ - $C_{13}$  heterocyclalkenyl,  $C_1$ - $C_{10}$  alkoxy,  $C_2$ - $C_{10}$  alkenyloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_2$ - $C_{10}$  alkenylthio,  $[C(R_7)_2]_n$ halo,  $[C(R_7)_2]_n(C=O)R_6$ ,  $[C(R_7)_2]_n(C=S)R_6$ ,  $[C(R_7)_2]_nN(R_4)_2$ ,  $[C(R_7)_2]_n(C=NR_4)R_6$ ,  $[C(R_7)_2]_nNO_2$  and  $[C(R_7)_2]_nNR_4OR_8$ ;

each  $R_4$  is independently selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclalkyl,  $C_5$ - $C_{13}$  heterocyclalkenyl,  $C_1$ - $C_{10}$  alkoxy and  $C_2$ - $C_{10}$  alkenyloxy;

$R_6$  is selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkoxy,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$

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alkenyloxy, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>6</sub>-C<sub>10</sub> aryloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>10</sub> heterocycloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>1</sub>-C<sub>10</sub> alkenylthio, C<sub>6</sub>-C<sub>10</sub> arylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

- 5 R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and NO<sub>2</sub>;

- 10 R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl; and

n is 0 or an integer selected from 1 to 5;

wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group


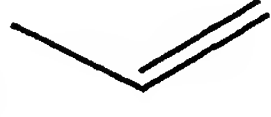
- 15 is optionally substituted.

34. A method according to claim 33 wherein R<sub>21</sub> is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>2</sub>-C<sub>10</sub> alkenyloxy wherein each C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

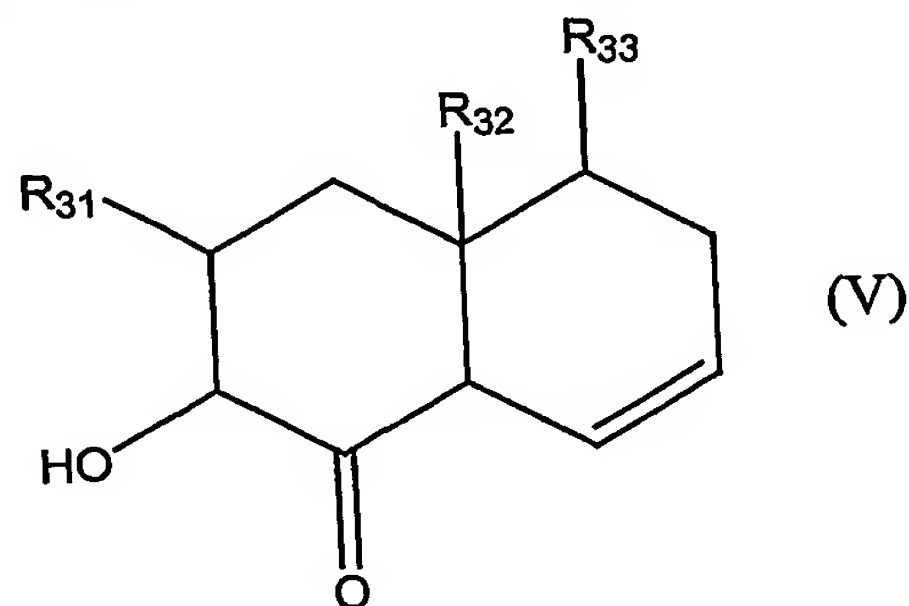
- 20 R<sub>22</sub> and R<sub>23</sub> are independently selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> heteroaryl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy, wherein each C<sub>1</sub>-C<sub>10</sub> alkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

- 25 35. A method according to claim 34 wherein R<sub>21</sub> is C<sub>2</sub>-C<sub>10</sub> alkenyl, optionally substituted with a hydroxy, thiol or nitro group or 1 to 3 halo groups, and R<sub>22</sub> and R<sub>23</sub> are independently selected from C<sub>1</sub>-C<sub>10</sub> alkyl, optionally substituted with a hydroxy, thiol or nitro group or 1 to 3 halo groups.

36. A method according to claim 26 wherein at least one compound of formula (I) is 8-hydroxy-1(10)dihydroeremophilone.

37. A composition according to claim 1 wherein  represents .

38. A composition according to claim 1 comprising at least one compound of formula (V):



5

wherein  $R_{31}$  is selected from the group consisting of  $C_2$ - $C_{10}$  alkenyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_2$ - $C_{10}$  alkenyloxy wherein each  $C_2$ - $C_{10}$  alkenyl or  $C_2$ - $C_{10}$  alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

$R_{32}$  and  $R_{33}$  are independently selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_3$ - $C_{10}$  cycloalkyl,  $C_5$ - $C_{10}$  heteroaryl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_1$ - $C_{10}$  alkoxy, wherein each  $C_1$ - $C_{10}$  alkyl and  $C_1$ - $C_{10}$  alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

39. A composition according to claim 38 wherein  $R_{31}$  is  $C_2$ - $C_{10}$  alkenyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups, and  $R_{32}$  and  $R_{33}$  are independently selected from  $C_1$ - $C_{10}$  alkyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups.

40. A composition according to claim 1 wherein at least one compound of formula (I) is 8-hydroxyeremophila-1,11-dienone.

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41. A method according to claim 26 wherein the composition comprises an extract containing at least one compound of formula (I) obtained from a volatile oil bearing plant from the Myoporaceae family.

42. A method according to claim 41 wherein the extract is obtained from *Eremophila*,  
5 *Myoporum* and *Bonita* genera.

43. A method according to claim 42 wherein the extract is obtained from *E. alternifolia*,  
*E. duttonii*, *E. Freelingii*, *E. longifolia*, *E. cuneifolia*, *E. dalayana*, *E. abietina*, *E. caerulea*,  
*E. virgata*, *E. interstans*, *E. flaccida*, *E. leucophylla*, *E. metallicorum*, *E. georgei*, *E.*  
*subteritifolia*.

10 44. A method according to claim 26 wherein the pest-controlling effective amount is a  
pesticidally effective amount.

45. A method according to claim 26 wherein the pest-controlling effective amount is a  
pest-repelling effective amount.

15 46. A method according to claim 26 wherein the pest-controlling effective amount is a  
antifeedant effective amount.

47. A method according to claim 26 wherein the pests are selected from the group  
consisting of insects, arachnids, helminths and molluscs.

48. A method according to claim 26 wherein the pests are selected from the group  
consisting of termites, earwigs, cockroaches and wood borer beetles and their larvae.

20 49. A method according to claim 26 wherein the pests are wood associated pests.

50. A method according to claim 49 wherein the wood associated pests are selected from  
the group consisting of termites and wood borer beetles.

51. A method according to claim 50 wherein the wood associated pests are termites.

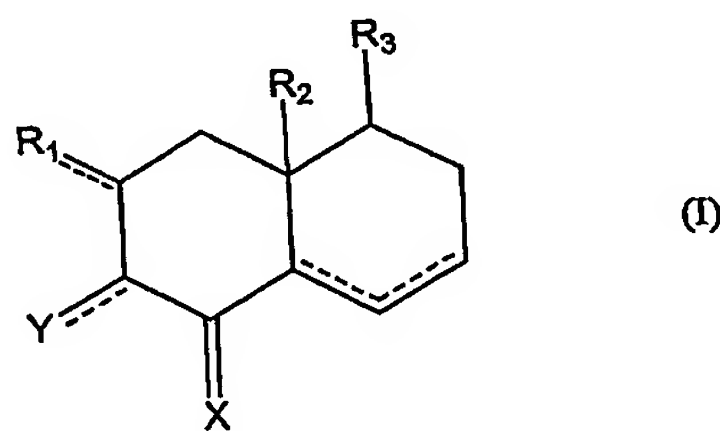
25 52. A method according to claim 26 wherein pests are exposed to the pest-controlling  
effective amount of a compound of formula (I) or a composition comprising at least one



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compound of formula (I) by applying the compound or composition to a site of infestation, a potential site of infestation, a habitat of the pest or a potential habitat of the pest.

53. A method according to claim 52 wherein the compound or composition is applied to a surface or impregnated into a material or article of manufacture.
- 5 54. A method according to claim 53 wherein the compound or composition is applied to a surface by spraying, coating or painting the surface.
55. A method according to claim 54 wherein the surface is a soil surface, timber, buildings, wooden articles of manufacture or a physical barrier.
56. A method according to claim 55 wherein the material or article of manufacture is soil,  
10 timber, timber or wooden products or buildings or parts of buildings.
57. A method according to claim 52 wherein the compound or composition is applied in a band or furrow around a site of infestation or potential infestation or is mixed with a layer of soil at a site of infestation or a potential site of infestation.
58. A material or article of manufacture for use in pest control that is coated or  
15 impregnated with at least one compound of formula (I) or a tautomer thereof or with a composition containing at least one compound of formula (I) or a tautomer thereof.



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

- 20 when ----- is a single bond attached to Y, Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

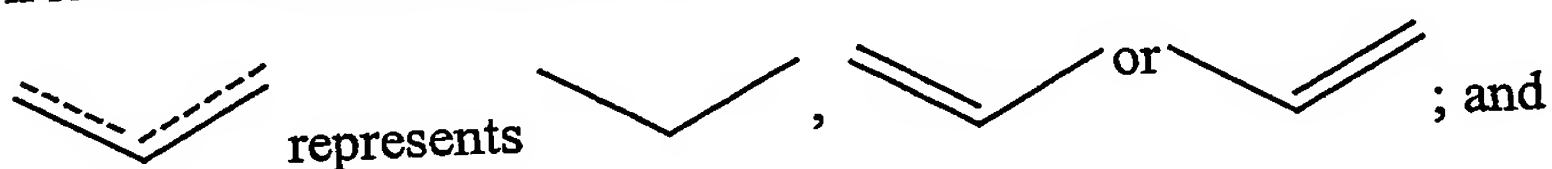
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cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

- R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and NO<sub>2</sub>;

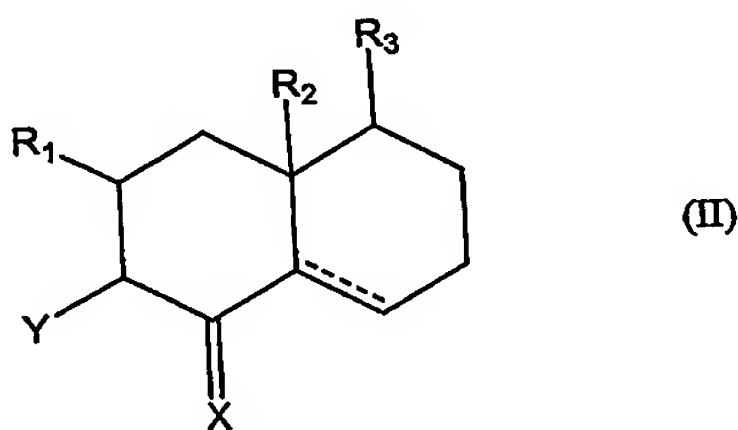
- R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl;

- 10 n is 0 or an integer selected from 1 to 5;



wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

59. A material or article of manufacture for use in pest control according to claim 58  
15 wherein the compound of formula (I) is a compound of formula (II):



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

- Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>,  
20 [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub>  
and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-

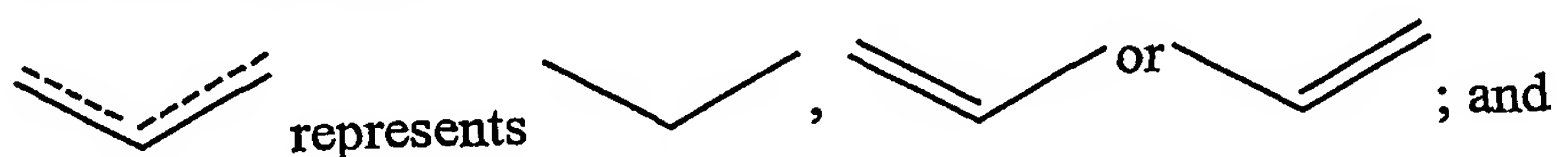
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cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl, and NO<sub>2</sub>;

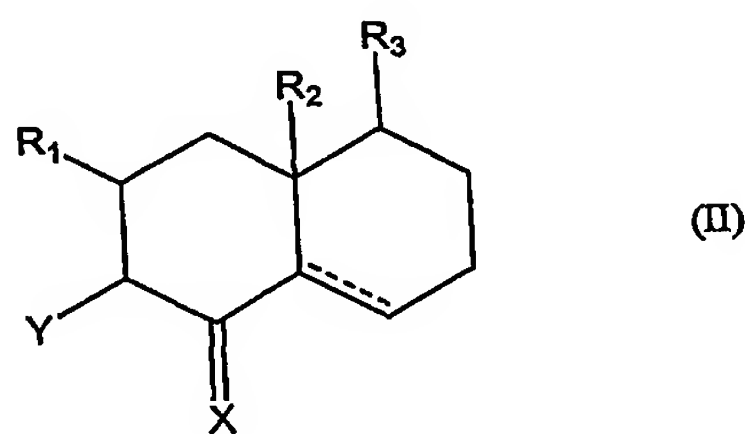
R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclalkenyl;

n is 0 or an integer selected from 1 to 5;



wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

59. A material or article of manufacture according to claim 58 wherein the compound of formula (I) is a compound of formula (II):



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

Y is selected from the group consisting of H, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>OR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>SR<sub>5</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of H, OH, SH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-

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C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkenylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>2</sub>-C<sub>10</sub> alkenylthio, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>halo, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=O)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=S)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>N(R<sub>4</sub>)<sub>2</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>(C=NR<sub>4</sub>)R<sub>6</sub>, [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NO<sub>2</sub> and  
 5 [C(R<sub>7</sub>)<sub>2</sub>]<sub>n</sub>NR<sub>4</sub>OR<sub>8</sub>;

each R<sub>4</sub> is independently selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, C<sub>1</sub>-C<sub>10</sub> alkoxy and C<sub>2</sub>-C<sub>10</sub> alkenyloxy;

10 R<sub>5</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, (C=O)R<sub>6</sub>, PO<sub>3</sub>R<sub>8</sub>, SO<sub>3</sub>R<sub>8</sub> and SO<sub>2</sub>R<sub>8</sub>;

15 R<sub>6</sub> is selected from the group consisting of H, OH, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyloxy, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>6</sub>-C<sub>10</sub> aryloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>10</sub> heterocycliloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>1</sub>-C<sub>10</sub> alkenylthio, C<sub>6</sub>-C<sub>10</sub> arylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

20 R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and NO<sub>2</sub>;

25 R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl;

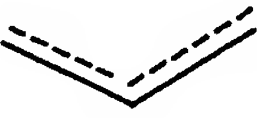
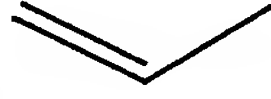
n is 0 or an integer selected from 1 to 5;

----- represents a single or double bond; and

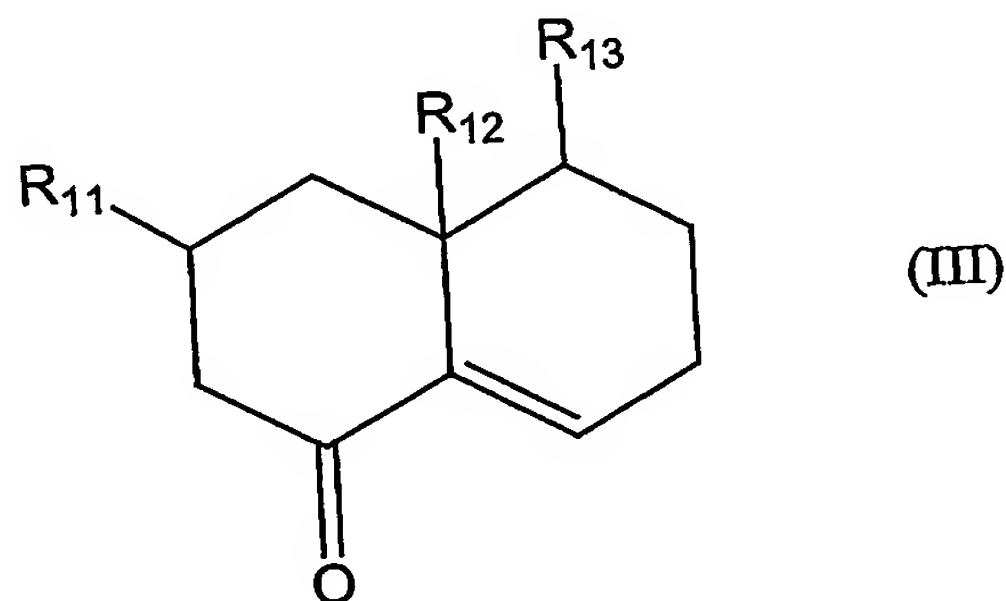
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wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

60. A material or article of manufacture for use in pest control according to claim 58,

wherein  represents  in the compound of formula (I).

5 61. A material or article of manufacture for use in pest control according to claim 58, wherein at least one compound of formula (I) is a compound of formula (III):



wherein R<sub>11</sub> is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>2</sub>-C<sub>10</sub> alkenyloxy wherein each C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and


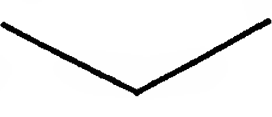
10 R<sub>12</sub> and R<sub>13</sub> are independently selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> heteroaryl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy, wherein each C<sub>1</sub>-C<sub>10</sub> alkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

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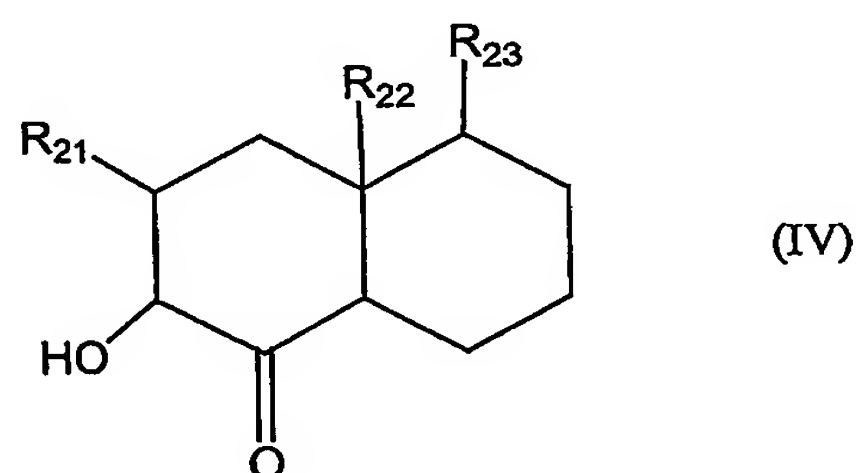
62. A material or article of manufacture for use in pest control according to claim 61, wherein  $R_{11}$  is  $C_2$ - $C_{10}$  alkenyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups, and  $R_{12}$  and  $R_{13}$  are independently selected from  $C_1$ - $C_{10}$  alkyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups.

5 63. A material or article of manufacture for use in pest control according to claim 58 wherein at least one compound of formula (I) is eremophilone.

64. A material or article of manufacture for use in pest control according to claim 58

wherein  represents  in the compound of formula (I).

65. A material or article of manufacture for use in pest control according to claim 58  
10 wherein at least one compound of formula (I) is a compound of formula (IV):



wherein  $R_{21}$ ,  $R_{22}$  and  $R_{23}$  are independently selected from the group consisting of H, OH, SH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_4$ - $C_{10}$  cycloalkenylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $C_1$ - $C_{10}$  alkoxy,  $C_2$ - $C_{10}$  alkenyloxy,  $C_1$ - $C_{10}$  alkylthio,  $C_2$ - $C_{10}$  alkenylthio,  $[C(R_7)_2]_n$ halo,  $[C(R_7)_2]_n(C=O)R_6$ ,  $[C(R_7)_2]_n(C=S)R_6$ ,  $[C(R_7)_2]_nN(R_4)_2$ ,  $[C(R_7)_2]_n(C=NR_4)R_6$ ,  $[C(R_7)_2]_nNO_2$  and  $[C(R_7)_2]_nNR_4OR_8$ ;

each  $R_4$  is independently selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_8$ - $C_{13}$  arylalkenyl,  $C_3$ - $C_6$  cycloalkyl,  $C_3$ - $C_6$  cycloalkenyl,  $C_4$ - $C_{10}$  cycloalkylalkyl,  $C_3$ - $C_{10}$  heterocyclyl,  $C_4$ - $C_{12}$  heterocyclylalkyl,  $C_5$ - $C_{13}$  heterocyclylalkenyl,  $C_1$ - $C_{10}$  alkoxy and  $C_2$ - $C_{10}$  alkenyloxy;

$R_6$  is selected from the group consisting of H, OH,  $C_1$ - $C_{10}$  alkoxy,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$



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alkenyloxy, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>6</sub>-C<sub>10</sub> aryloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>1</sub>-C<sub>10</sub> alkenylthio, C<sub>6</sub>-C<sub>10</sub> arylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

- 5 R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and NO<sub>2</sub>;

- 10 R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl; and

n is 0 or an integer selected from 1 to 5;

- 15 wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

66. A material or article of manufacture for use in pest control according to claim 65 wherein R<sub>21</sub> is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>2</sub>-C<sub>10</sub> alkenyloxy wherein each C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

- 20 R<sub>22</sub> and R<sub>23</sub> are independently selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> heteroaryl, C<sub>6</sub>-C<sub>12</sub> heteroarylalkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy, wherein each C<sub>1</sub>-C<sub>10</sub> alkyl and C<sub>1</sub>-C<sub>10</sub> alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

- 25 67. A material or article of manufacture for use in pest control according to claim 66 wherein R<sub>21</sub> is C<sub>2</sub>-C<sub>10</sub> alkenyl, optionally substituted with a hydroxy, thiol or nitro group or 1 to 3 halo groups, and R<sub>22</sub> and R<sub>23</sub> are independently selected from C<sub>1</sub>-C<sub>10</sub> alkyl, optionally substituted with a hydroxy, thiol or nitro group or 1 to 3 halo groups.

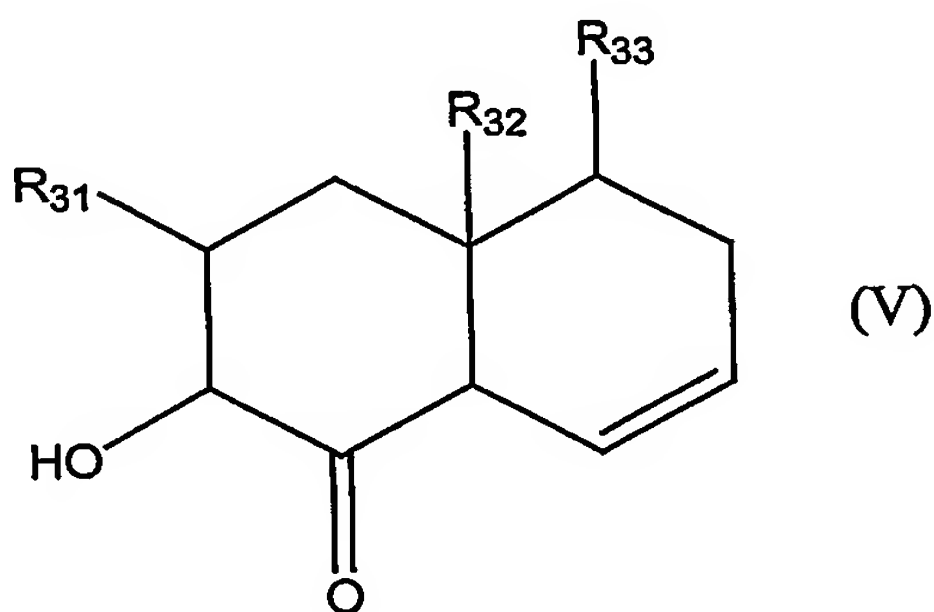
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68. A material or article of manufacture for use in pest control according to claim 58 wherein at least one compound of formula (I) is 8-hydroxy-1(10)dihydroeremophilone.

69. A material or article of manufacture for use in pest control according to claim 58

wherein  represents .

5 70. A material or article of manufacture for use in pest control according to claim 58 comprising at least one compound of formula (V):



wherein  $R_{31}$  is selected from the group consisting of  $C_2$ - $C_{10}$  alkenyl,  $C_7$ - $C_{12}$  arylalkyl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_2$ - $C_{10}$  alkenyloxy wherein each  $C_2$ - $C_{10}$  alkenyl or  $C_2$ - $C_{10}$  alkenyloxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups; and

$R_{32}$  and  $R_{33}$  are independently selected from the group consisting of H,  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{10}$  aryl,  $C_7$ - $C_{12}$  arylalkyl,  $C_3$ - $C_{10}$  cycloalkyl,  $C_5$ - $C_{10}$  heteroaryl,  $C_6$ - $C_{12}$  heteroarylalkyl and  $C_1$ - $C_{10}$  alkoxy, wherein each  $C_1$ - $C_{10}$  alkyl and  $C_1$ - $C_{10}$  alkoxy is optionally substituted with 1 to 3 halo, hydroxy, thiol or nitro groups.

15 71. A material or article of manufacture for use in pest control according to claim 70 wherein  $R_{31}$  is  $C_2$ - $C_{10}$  alkenyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups, and  $R_{32}$  and  $R_{33}$  are independently selected from  $C_1$ - $C_{10}$  alkyl optionally substituted with a hydroxy, nitro or thiol group or 1 to 3 halo groups.

72. A material or article of manufacture for use in pest control according to claim 58  
20 wherein at least one compound of formula (I) is 8-hydroxyeremophila-1,11-dienone.

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73. A material or article of manufacture for use in pest control according to claim 58 wherein the composition comprises an extract containing at least one compound of formula (I) obtained from a volatile oil bearing plant from the Myoporaceae family.

74. A material or article of manufacture for use in pest control according to claim 73 wherein the extract is obtained from *Eremophila*, *Myoporum* and *Bonita* genera.

75. A material or article of manufacture for use in pest control according to claim 74 wherein the extract is obtained from *E. alternifolia*, *E. duttonii*, *E. Freelingii*, *E. longifolia*, *E. cuneifolia*, *E. dalayana*, *E. abietina*, *E. caerulea*, *E. virgata*, *E. interstans*, *E. flaccida*, *E. leucophylla*, *E. metallicorum*, *E. georgei*, *E. subteritifolia*.

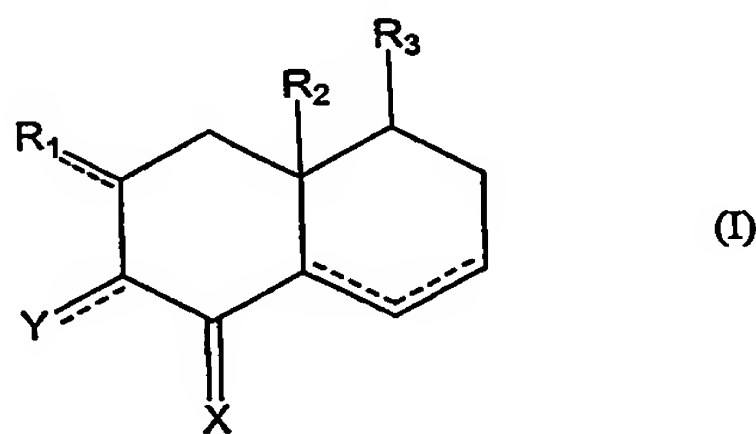
76. A material or article of manufacture for use in pest control according to claim 58 which is selected from the group consisting of a pest shield, pest barrier, soil or a timber product.

77. A pest control coating comprising a composition according to claim 1.

78. A pest control coating comprising a composition according to claim 20.

79. A method of combating an already existing wood associated pest infestation comprising applying a composition according to claim 1 or claim 20 or a coating of claim 77 or claim 78 to wood associated pest affected surface.

80. Use of at least one compound of formula (I) or a tautomer thereof in the manufacture of a composition for controlling pests:



wherein:

X is selected from the group consisting of O, S or N-R<sub>4</sub>;

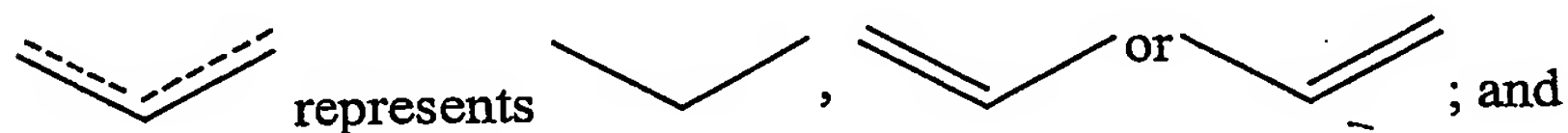
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when ----- is a single bond attached to Y, Y is selected from the group consisting of H,  $[C(R_7)_2]_n\text{halo}$ ,  $[C(R_7)_2]_nOR_5$ ,  $[C(R_7)_2]_nSR_5$ ,  $[C(R_7)_2]_n(C=O)R_6$ ,  $[C(R_7)_2]_n(C=S)R_6$ ,  $[C(R_7)_2]_nN(R_4)_2$ ,  $[C(R_7)_2]_n(C=NR_4)R_6$ ,  $[C(R_7)_2]_nNO_2$  and  $[C(R_7)_2]_nNR_4OR_8$ ; cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

- 5  $R_7$  is selected from the group consisting of H, halogen,  $OR_5$ ,  $SR_5$ ,  $N(R_4)_2$ ,  $(C=O)R_6$ ,  $(C=S)R_6$ , C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and  $NO_2$ ;

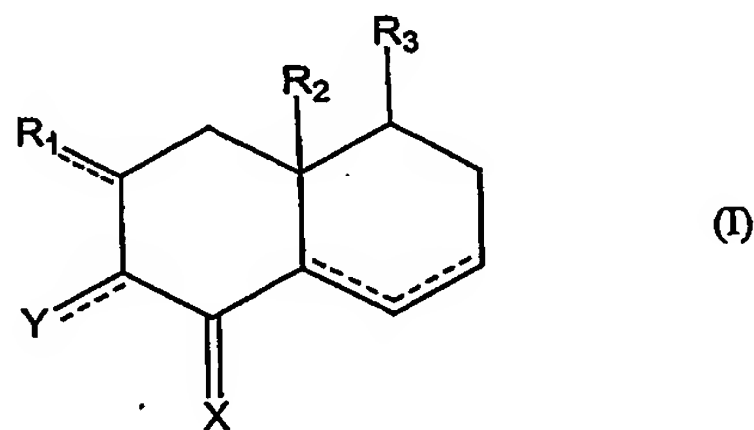
- 10  $R_8$  is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl;

n is 0 or an integer selected from 1 to 5;



- 15 wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted.

81. Use of at least one compound of formula (I) or a composition containing at least one compound of formula (I) in the manufacture of an article or material for controlling pests:



- 20 wherein:

X is selected from the group consisting of O, S or N- $R_4$ ;

when ----- is a single bond attached to Y, Y is selected from the group consisting of H,  $[C(R_7)_2]_n\text{halo}$ ,  $[C(R_7)_2]_nOR_5$ ,  $[C(R_7)_2]_nSR_5$ ,  $[C(R_7)_2]_n(C=O)R_6$ ,  $[C(R_7)_2]_n(C=S)R_6$ ,

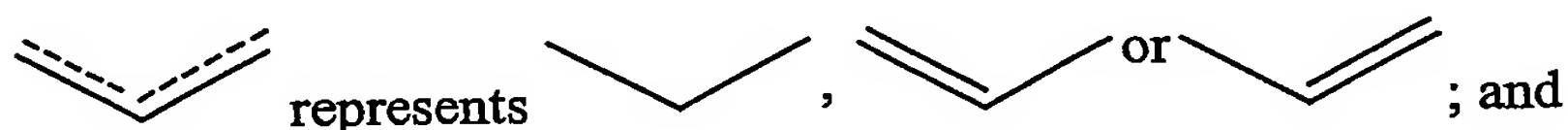
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$[C(R_7)_2]_n N(R_4)_2$ ,  $[C(R_7)_2]_n (C=NR_4)R_6$ ,  $[C(R_7)_2]_n NO_2$  and  $[C(R_7)_2]_n NR_4 OR_8$ ; cycloalkylthio, and C<sub>3</sub>-C<sub>10</sub> heterocyclylthio;

R<sub>7</sub> is selected from the group consisting of H, halogen, OR<sub>5</sub>, SR<sub>5</sub>, N(R<sub>4</sub>)<sub>2</sub>, (C=O)R<sub>6</sub>, (C=S)R<sub>6</sub>, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl, and NO<sub>2</sub>;

R<sub>8</sub> is selected from the group consisting of H, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>6</sub>-C<sub>10</sub> aryl, C<sub>7</sub>-C<sub>12</sub> arylalkyl, C<sub>8</sub>-C<sub>13</sub> arylalkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkenyl, C<sub>4</sub>-C<sub>10</sub> cycloalkylalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkylalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocyclyl, C<sub>4</sub>-C<sub>12</sub> heterocyclylalkyl and C<sub>5</sub>-C<sub>13</sub> heterocyclylalkenyl;

n is 0 or an integer selected from 1 to 5;



wherein each alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl and heterocyclyl group is optionally substituted;

wherein the article or material is coated or impregnated with the at least one compound of formula (I) or composition containing the at least one compound of formula (I).